

Walker Canyon ER: Field assessment and inventory have been completed as well as the entire initial exotic species removal treatment for the reserve. Walker Canyon had the highest exotic plant infestation of all the reserves except the San Elijo Lagoon ER. However, the infestation at Walker Canyon was limited to one species, tamarisk.

V. CALIFORNIA DEPARTMENT OF FISH AND GAME LANDS

Many Department lands are part of regional preserve systems. Baseline inventory has been the initial focus of monitoring for many of the properties.

Rancho Jamul Ecological Reserve



Figure 2. Rancho Jamul Ecological Reserve

The Rancho Jamul ER is a 3,700-acre property located in southern San Diego County near the community of Jamul (Figure 3). The property has a long history of human use, including row-crop and grain agriculture, and livestock grazing. The Department purchased the property in phases between 1998 and 2001 for the primary purpose of sensitive habitat and species conservation. This site is an important component of the MSCP multi-habitat preserve system in southwestern San Diego County, supporting large areas of coastal sage scrub, annual grasslands and riparian habitat. The MSCP is a subregional plan under the auspices of the State's NCCP program.

Baseline Resource Inventory

During 2001-2002 an extensive biological inventory was conducted on the Rancho Jamul ER property. Survey work was conducted by the Western Ecological Research Center of the USGS, as well as by SCR biologists, to assess the status of fish, wildlife, and plant resources on the site. In the course of this baseline resource inventory, permanent long-term monitoring sites were established that can be sampled by SCR biologists in the future to monitor changes in vegetation and species over time in response to natural variation and human-caused impacts. This information will be used in an adaptive management program for the property, and to contribute to regional NCCP monitoring goals.

For a detailed discussion of the USGS survey results for Rancho Jamul, please refer to the Department report: *Baseline Biodiversity Survey for the Rancho Jamul Ecological Reserve* (USGS, 2002). The following discussion will be a brief summary of the methods and results discussed in this report, plus additional information collected by Department biologists. The following biological sampling was conducted during 2001-2002:

1. Sixty-eight bird point count stations (50 m radius), sampled twice in 2001 (USGS).
2. Twenty-one sampling stations for amphibians, reptiles, small mammals, and ants:
a) twenty-one pitfall trap arrays (seven traps/array) were established for trapping amphibians and reptiles; b) each array site was also used as a small mammal trapping site (18 Sherman live traps/site); and c) small pit traps were used to collect ants at each of the 21 sample sites (USGS).
3. Vegetation map, including mapping of concentrations of exotic plant species (by Dr. John O'Leary of San Diego State University).
4. Rare/sensitive plant survey (by Scott McMillen)
5. Aquatic resources surveyed at seven ponds (seining, dip nets, and traps) (USGS).
6. Bat surveys at 12 locations (including observations, mist-netting, and sonic detection), 14 nights of survey effort (USGS).
7. Carnivore/large mammals: seven track transects (including scent stations) and five remotely-triggered cameras (USGS).
8. Species-specific surveys: a) least Bell's vireo surveys conducted by Wildlands, Inc. as a requirement for monitoring its wetland mitigation bank; b) grasshopper sparrow preliminary assessment of use areas by SCR biologists for possible detailed monitoring in the future.
9. Raptor surveys: general raptor survey of portions of the property by the Wildlife Research Institute as part of a larger raptor survey of the MSCP area.

Key findings:

1. Refer to Table 4 for a listing of all vertebrate species found on the Rancho Jamul ER during the baseline inventory surveys.

2. No non-native ant species were found on Rancho Jamul ER. There was specific concern that the Argentine ant would be present, since the property has had a long history of human use, but this proved not to be an issue.
3. Refer to Figure 4 for the current Rancho Jamul ER vegetation map.
4. Six of the twelve bat species detected on the property are listed as California Species of Special Concern: Yuma myotis, Townsend's big-eared bat, pallid bat, pocketed free-tailed bat, big free-tailed bat, and the Western mastiff bat. Two species (Yuma myotis and big brown bat) were documented to breed on-site.
5. A total of 108 bird species was found on the property, through bird point count sampling or casual observation. Twenty-one of the species observed are considered sensitive:

White-tailed kite	FP
Northern harrier	SSC, MSCP
Cooper's hawk	SSC, MSCP
Golden eagle	FP, MSCP
Merlin	SSC
American peregrine falcon	SE, FP, MSCP
Prairie falcon	SSC
Burrowing owl	SSC, MSCP
Long-eared owl	SSC
Willow flycatcher	SE
Loggerhead shrike	SSC
Least Bell's vireo	SE, FE, MSCP
California horned lark	SSC
California gnatcatcher	FT, SSC, MSCP
Western bluebird	MSCP
Swainson's thrush	SSC
Yellow warbler	SSC
Yellow-breasted chat	SSC
So. Calif. Rufous-crowned sparrow	SSC, MSCP
Bell's sage sparrow	SSC
Grasshopper sparrow	SSC

SE-State endangered; FE-Federal endangered; FT-Federal threatened; FP-State fully protected; SSC-California Species of Special Concern; MSCP-MSCP covered species.

6. Twenty-nine reptile and amphibian species were detected (pitfall traps, aquatic surveys and incidental observations). Two species, the bullfrog and African clawed frog, are non-native. Five species are considered sensitive (orange-throated whiptail, coast horned lizard, Western patch-nosed snake, two-striped garter snake, red diamond rattlesnake, and the Western spadefoot toad).

7. Quino checkerspot butterfly, a federally-endangered species, was detected during focused surveys by the Department and USGS biologists.
8. Eighteen rare plant species were found during extensive surveys in the 2001-2002 period, two of which are listed as State-endangered and Federally-threatened: San Diego thornmint (*Acanthomintha ilicifolia*) and Otay tarplant (*Deinandra [Hemizonia] conjugens*). Both listed plants are associated with clay soils on-site.

Research

A research project is currently underway on the Rancho Jamul ER to assess the quality of coastal sage scrub habitat in relation to a suite of biological and landscape variables. The Department is funding research by Dr. Jay Diffendorfer at San Diego State University to create an Index of Biological Integrity for the coastal sage scrub ecosystem. Extensive wildlife and vegetation sampling is being done at a number of sites in southern California, including the Rancho Jamul ER, to try and create an index of habitat quality by measuring those biological elements that appear most sensitive to various levels of habitat degradation. Measurements are being taken across a gradient of disturbance within the sage scrub ecosystem. Biological elements being measured include, bird diversity and abundance, reptile/amphibian diversity and abundance, small mammal diversity and abundance, vegetation (including exotic plant species), and insect communities. In addition, landscape features such as habitat patch size and distance of patch to the next closest patch will be assessed. Field data was collected throughout 2002, and a second years' worth of data will be collected in 2003. The final report is expected in the summer of 2004.

Management Plan

Now that the baseline biological inventory of the Rancho Jamul ER has been completed, the Department plans on writing the management plan for the ER during 2003. A draft management plan will be circulated for public review and input through the California Environmental Quality Act (CEQA) process. Public input will be reviewed and incorporated where appropriate before the plan is finalized.

Table 4: Species Occurring in the Rancho Jamul ER – 2001-2002

MAMMALS			
Common Name	Scientific Name	Status	Comments*
Virginia Opossum	<i>Didelphis virginiana</i>	I	TS
Ornate Shrew	<i>Sorex ornatus</i>		PF
Desert Shrew	<i>Notiosorex crawfordi</i>		PF
Yuma Myotis	<i>Myotis yumanensis</i>	SSC	BS
California Myotis	<i>Myotis californicus</i>		BS
W. Small-footed Myotis	<i>Myotis ciliolabrum</i>		BS
Western Pipistrelle	<i>Pipistrellus hesperus</i>		BS
Big Brown Bat	<i>Eptesicus fuscus</i>		BS

Hoary Bat	<i>Lasiurus cinereus</i>		BS
Townsend's Big-eared Bat	<i>Corynorhinus (Plecotus) townsendii</i>	SSC	BS
Pallid Bat	<i>Antrozous pallidus</i>	SSC	BS
Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>		BS
Pocketed Free-tailed Bat	<i>Nyctinomops femorosacca</i>	SSC	BS
Big Free-tailed Bat	<i>Nyctinomops macrotis</i>	SSC	BS
Western Mastiff Bat	<i>Eumops perotis</i>	SSC	BS
Audubon's (Desert) Cottontail	<i>Sylvilagus audubonii</i>		RC, TS
Black-tailed Jackrabbit	<i>Lepus californicus</i>	MSCP	RC
California Ground Squirrel	<i>Spermophilus beecheyi</i>		TS
Botta's Pocket Gopher	<i>Thomomys bottae</i>		PF
San Diego Pocket Mouse	<i>Chaetodipus fallax</i>		PF, ST
Dulzura (San Diego) Kangaroo Rat	<i>Dipodomys simulans</i>		PF, ST
W. Harvest Mouse	<i>Reithrodontomys megalotis</i>		PF
Cactus Mouse	<i>Peromyscus eremicus</i>		PF, ST
California Mouse	<i>Peromyscus californicus</i>		PF
Desert Woodrat	<i>Neotoma lepida.</i>	SSC	PF, ST
House Mouse	<i>Mus musculus</i>	I	ST
California Vole	<i>Microtus californicus</i>		PF
Domestic Dog	<i>Canis familiaris</i>	I	RC, TS
Coyote	<i>Canis latrans</i>		RC, TS
Gray fox	<i>Urocyon cinereoargenteus</i>		TS
Raccoon	<i>Procyon lotor</i>		TS
W. Spotted Skunk	<i>Spilogale gracilis</i>		TS
Striped Skunk	<i>Mephitis mephitis</i>		RC, TS
Long-tailed Weasel	<i>Mustela frenata</i>		1 dead in cistern (DFG)
Feral Cat	<i>Felis cattus</i>	I	TS
Bobcat	<i>Lynx rufus</i>		RC, TS
Mountain Lion	<i>Puma concolor</i>	MSCP	RC
Mule Deer	<i>Odocoileus hemionus</i>	MSCP	RC, TS

BIRDS

Common Name	Scientific Name	Status	Comments*
Eared Grebe	<i>Podiceps nigricollis</i>		IN
Great Blue Heron	<i>Ardea herodias</i>		IN (DFG)
Snowy Egret	<i>Egretta thula</i>		IN
Green Heron	<i>Butorides virescens</i>		BP
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>		IN
Turkey Vulture	<i>Cathartes aura</i>		IN
Mallard	<i>Anas platyrhynchos</i>		BP
Ring-necked Duck	<i>Aythya collaris</i>		IN
Bufflehead	<i>Bucephala albeola</i>		IN

White-tailed Kite	<i>Elanus leucurus</i>	FP	BP
Northern Harrier	<i>Circus cyaneus</i>	SSC, MSCP	IN
Sharp-shinned Hawk	<i>Accipiter striatus</i>		IN (DFG)
Cooper's Hawk	<i>Accipiter cooperii</i>	SSC, MSCP	IN (DFG)
Red-shouldered Hawk	<i>Buteo lineatus</i>		BP
Red-tailed Hawk	<i>Buteo jamaicensis</i>		BP
Golden Eagle	<i>Aquila chrysaetos</i>	FP, MSCP	IN (DFG)
American Kestrel	<i>Falco sparverius</i>		BP
Merlin	<i>Falco columbarius</i>	SSC	BP
Peregrine Falcon	<i>Falco peregrinus</i>	SE, FP, MSCP	BP
Prairie Falcon	<i>Falco mexicanus</i>	SSC	IN
Ring-necked Pheasant	<i>Phasianus colchicus</i>	I	IN
California Quail	<i>Callipepla californica</i>		BP
Killdeer	<i>Charadrius vociferus</i>		BP
Greater Yellowlegs	<i>Tringa melanoleuca</i>		IN
Mourning Dove	<i>Zenaida macroura</i>		BP
Greater Roadrunner	<i>Geococcyx californianus</i>		BP,RC
Barn Owl	<i>Tyto alba</i>		NT
Great Horned Owl	<i>Bubo virginianus</i>		NT
Burrowing Owl	<i>Speotyto (Athene) cunicularia</i>	SSC, MSCP	NT
Long-eared Owl	<i>Asio otus</i>	SSC	NT
Common Poorwill	<i>Phalaenoptilus nuttallii</i>		NT
Black-chinned Hummingbird	<i>Archilochus alexandri</i>		IN
Anna's Hummingbird	<i>Calypte anna</i>		BP
Costa's Hummingbird	<i>Calypte costae</i>		BP
Allen's Hummingbird	<i>Selasphorus sp.</i>		BP
Belted Kingfisher	<i>Ceryle alcyon</i>		IN
Acorn Woodpecker	<i>Melanerpes formicivorus</i>		BP
Nuttall's Woodpecker	<i>Picoides nuttallii</i>		BP
Northern Flicker	<i>Colaptes auratus</i>		IN
Western Wood-pewee	<i>Contopus sordidulus</i>		IN (DFG)
Willow Flycatcher	<i>Empidonax trailii</i>	SE	IN (DFG)
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>		IN
Black Phoebe	<i>Sayornis nigricans</i>		BP
Say's Phoebe	<i>Sayornis saya</i>		IN
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>		BP
Cassin's Kingbird	<i>Tyrannus vociferans</i>		IN (DFG)
Western Kingbird	<i>Tyrannus verticalis</i>		BP
Loggerhead Shrike	<i>Lanius ludovicianus</i>	SSC	BP

Least Bell's Vireo	<i>Vireo bellii pusillus</i>	FE, SE, MSCP	BP
Cassin's Vireo	<i>Vireo cassinii</i>		IN (DFG)
Hutton's Vireo	<i>Vireo huttoni</i>		IN (DFG)
Warbling Vireo	<i>Vireo gilvus</i>		BP
Magpie Jay	<i>Calocitta colliei</i>	I	IN
Western Scrub Jay	<i>Aphelocoma californica</i>		BP
American Crow	<i>Corvus brachyrhynchos</i>		BP
Common Raven	<i>Corvus corax</i>		BP
Horned Lark	<i>Eremophila alpestris actia</i>	SSC	BP
Tree Swallow	<i>Tachycineta bicolor</i>		IN (DFG)
Violet-green Swallow	<i>Tachycineta thalassina</i>		BP
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>		BP
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>		BP
Oak Titmouse	<i>Baeolophus inornatus</i>		BP
Bushtit	<i>Psaltirparus minimus</i>		BP
Bewick's Wren	<i>Thryomanes bewickii</i>		BP
House Wren	<i>Troglodytes aedon</i>		IN
California Gnatcatcher	<i>Poliophtila californica</i>	FT, SSC, MSCP	BP
Western Bluebird	<i>Sialia mexicana</i>	MSCP	IN
Mountain Bluebird	<i>Sialia currucoides</i>		IN
Swainson's Thrush	<i>Catharus ustulatus</i>	SSC	IN (DFG)
Wrentit	<i>Chamaea fasciata</i>		BP
Northern Mockingbird	<i>Mimus polyglottos</i>		BP
California Thrasher	<i>Toxostoma redivivum</i>		BP
European Starling	<i>Sturnus vulgaris</i>	I	BP
Phainopepla	<i>Phainopepla nitens</i>		BP
Orange-crowned Warbler	<i>Vermivora celata</i>		BP
Nashville Warbler	<i>Vermivora ruficapilla</i>		BP
Yellow Warbler	<i>Dendroica petechia</i>	SSC	BP
Yellow-rumped Warbler	<i>Dendroica coronata</i>		BP
Townsend's Warbler	<i>Dendroica townsendi</i>		BP
Common Yellowthroat	<i>Geothlypis trichas</i>		BP
Wilson's Warbler	<i>Wilsonia pusilla</i>		IN (DFG)
Yellow-breasted Chat	<i>Icteria virens</i>	SSC	BP
Western Tanager	<i>Piranga ludoviciana</i>		BP
Spotted Towhee	<i>Pipilo maculatus</i>		BP
California Towhee	<i>Pipilo crissalis</i>		BP
So. Calif. Rufous-crowned Sparrow	<i>Aimophila ruficeps canescens</i>	SSC, MSCP	BP
Chipping Sparrow	<i>Spizella passerina</i>		IN
Vesper Sparrow	<i>Poocetes gramineus</i>		IN (DFG)
Lark Sparrow	<i>Chondestes grammacus</i>		BP

Bell's Sage Sparrow	<i>Amphispiza belli belli</i>	SSC, MSCP	BP
Savannah Sparrow	<i>Passerculus sandwichensis</i>		BP
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SSC	BP
Song Sparrow	<i>Melospiza melodia</i>		BP
Lincoln's Sparrow	<i>Melospiza lincolni</i>		IN (DFG)
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>		BP
Dark-eyed Junco	<i>Junco hyemalis</i>		IN
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>		IN
Blue Grosbeak	<i>Guiraca caerulea</i>		BP
Lazuli Bunting	<i>Passerina amoena</i>		BP, RC
Red-winged Blackbird	<i>Agelaius phoeniceus</i>		BP
Western Meadowlark	<i>Sturnella neglecta</i>		BP
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>		BP
Brown-headed Cowbird	<i>Molothrus ater</i>		IN (DFG)
Bullock's Oriole	<i>Icterus bullockii</i>		BP
House Finch	<i>Carpodacus mexicanus</i>		BP
Lesser Goldfinch	<i>Carduelis psaltria</i>		BP
Lawrence's Goldfinch	<i>Carduelis lawrencei</i>		BP
American Goldfinch	<i>Carduelis tristis</i>		BP
REPTILES			
Common Name	Scientific Name	Status	Comments*
Granite Spiny Lizard	<i>Sceloporus orcutti</i>		PF
Western Fence Lizard	<i>Sceloporus occidentalis</i>		PF
Side-blotched Lizard	<i>Uta stansburiana</i>		PF
Coast Horned Lizard	<i>Phrynosoma coronatum</i>	SSC, MSCP	PF
Granite Night Lizard	<i>Xantusia henshawi</i>		PF
Western Skink	<i>Eumeces skiltonianus</i>		PF
Gilbert's Skink	<i>Eumeces gilberti</i>		PF
Orange-throated Whiptail	<i>Cnemidophorus hyperythrus</i>	SSC, MSCP	PF
Western Whiptail	<i>Cnemidophorus tigris</i>		PF
Southern Alligator Lizard	<i>Elgaria multicarinata</i>		PF
Western Blind Snake	<i>Leptotyphlops humilis</i>		PF
Rosy Boa	<i>Lichanura trivirgata</i>		IN (DFG)
Ringneck Snake	<i>Diadophis punctatus</i>		PF
Baja California Coachwhip	<i>Masticophis flagellum</i>		PF
Striped Racer	<i>Masticophis lateralis</i>		PF
W. Patch-nosed Snake	<i>Salvadora hexalepis</i>	SSC	PF
Gopher Snake	<i>Pituophis melanoleucus</i>		PF
Common Kingsnake	<i>Lampropeltis getula</i>		PF
Long-nosed Snake	<i>Rhinocheilus lecontei</i>		PF
Two-striped Garter Snake	<i>Thamnophis hammondi</i>	SSC	AS, PF
CA Black-headed Snake	<i>Tantilla planiceps</i>		PF

Red Diamond Rattlesnake	<i>Crotalus ruber ruber</i>	SSC	PF
Western Rattlesnake	<i>Crotalus viridis</i>		PF
AMPHIBIANS			
Common Name	Scientific Name	Status	Comments*
Garden Slender Salamander	<i>Batrachoseps major</i>		PF
Western Spadefoot	<i>Spea (Scaphiopus) hammondi</i>	SSC	AS, PF
Western Toad	<i>Bufo boreas</i>		AS,PF
Pacific Tree Frog	<i>Hyla regilla</i>		AS
Bullfrog	<i>Rana catesbeiana</i>	I	AS, PF
African Clawed Frog	<i>Xenopus laevis</i>	I	AS
FISHES			
Common Name	Scientific Name	Status	Comments*
Mosquito Fish	<i>Gambusia affinis</i>	I	AS
Green Sunfish	<i>Lepomis cyanellus</i>	I	AS
Bluegill	<i>Lepomis macrochirus</i>	I	AS
Largemouth Bass	<i>Micropterus salmoides</i>	I	AS
Black Crappie	<i>Pomoxis nigromaculatus</i>	I	AS
Black Bullhead	<i>Ameiurus melas</i>	I	AS
INVERTEBRATES			
Common Name	Scientific Name	Status	Comments*
Quino Checkerspot Butterfly	<i>Euphydryas editha quina</i>	FE	Focus surveys by USGS and DFG.
SENSITIVE PLANTS			
Common Name	Scientific Name	Status	Comments*
San Diego Thornmint	<i>Acanthomintha lilcifolia</i>	SE, FT, MSCP	RP
South Coast Saltscale	<i>Atriplex pacifica</i>		RP
Mesa Brodiaea	<i>Brodiaea holonensis</i>		RP
Small-flowered Morning-glory	<i>Convolvulus simulans</i>		RP
Annual Hairgrass	<i>Deschampsia danthonioides</i>		RP
Western Dichondra	<i>Dichondra occidentalis</i>		RP
Variegated Dudleya	<i>Dudleya variegata</i>	MSCP	RP
San Diego Barrel Cactus	<i>Ferocactus viridescens</i>	MSCP	RP
Chocolate Lily	<i>Fritilaria biflora</i>		RP
Palmer's Grapplinghook	<i>Harpagonella palmeri</i>		RP
Otay Tarplant	<i>Deinandra (Hemizonia) conjugens</i>	SE, FT, MSCP	RP

San Diego Marsh-elder	<i>Iva hayesiana</i>		RP
Southwestern Spiny Rush	<i>Juncus acutus ssp. Leopoldii</i>		RP
San Diego Goldenstar	<i>Muilla clevelandii</i>	MSCP	RP
Dot-seed Plantain	<i>Plantago erecta</i>		RP
Coulter's Matilija Poppy	<i>Romneya coulteri</i>		RP
Ashy Spike-moss	<i>Selaginella cinerascens</i>		RP
San Diego Sunflower	<i>Viguiera laciniata</i>		RP

*All records from "Baseline Biodiversity Survey for Rancho Jamul Ecological Reserve", USGS-BRD, 2002 except those marked (DFG), indicating Department of Fish and Game origin.

Status codes : SE-State endangered; FE-Federal endangered; FT-Federal threatened; FP-State fully protected; SSC-California Species of Special Concern; MSCP-MSCP covered species; I -Introduced.

Comments codes : AS-Aquatic Survey; BP-Bird Point Count Survey; BS-Bat Survey; IN-Incidental; NT-Night Time Bird Point Count Survey; PF-Pitfall Survey; RC-Remote Camera; RP-Rare Plant Survey; ST-Sherman Traps; TS-Track Station.

Rancho Jamul Ecological Reserve and Hollenbeck Canyon Wildlife Area

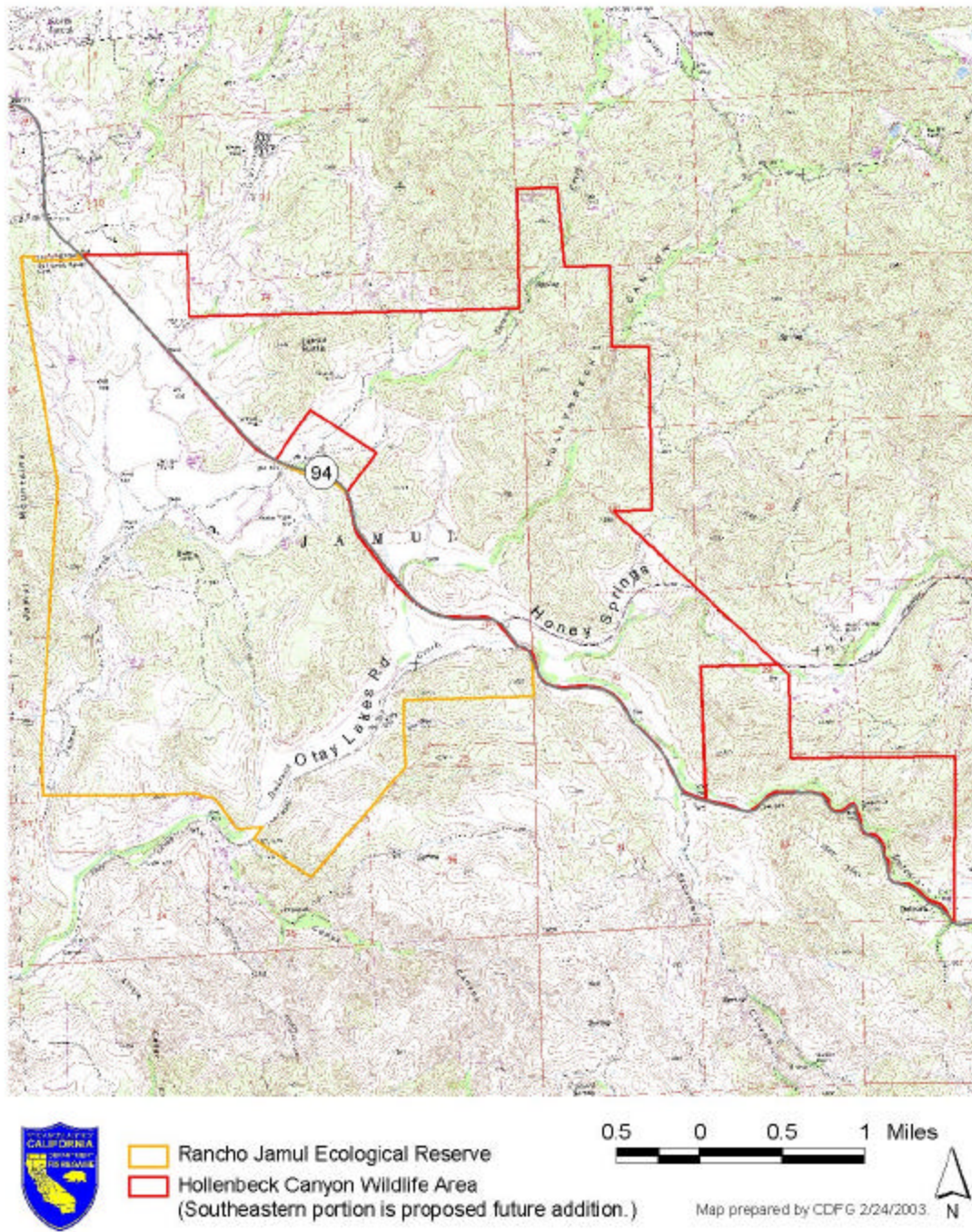


Figure 3: Map of Rancho Jamul Ecological Preserve

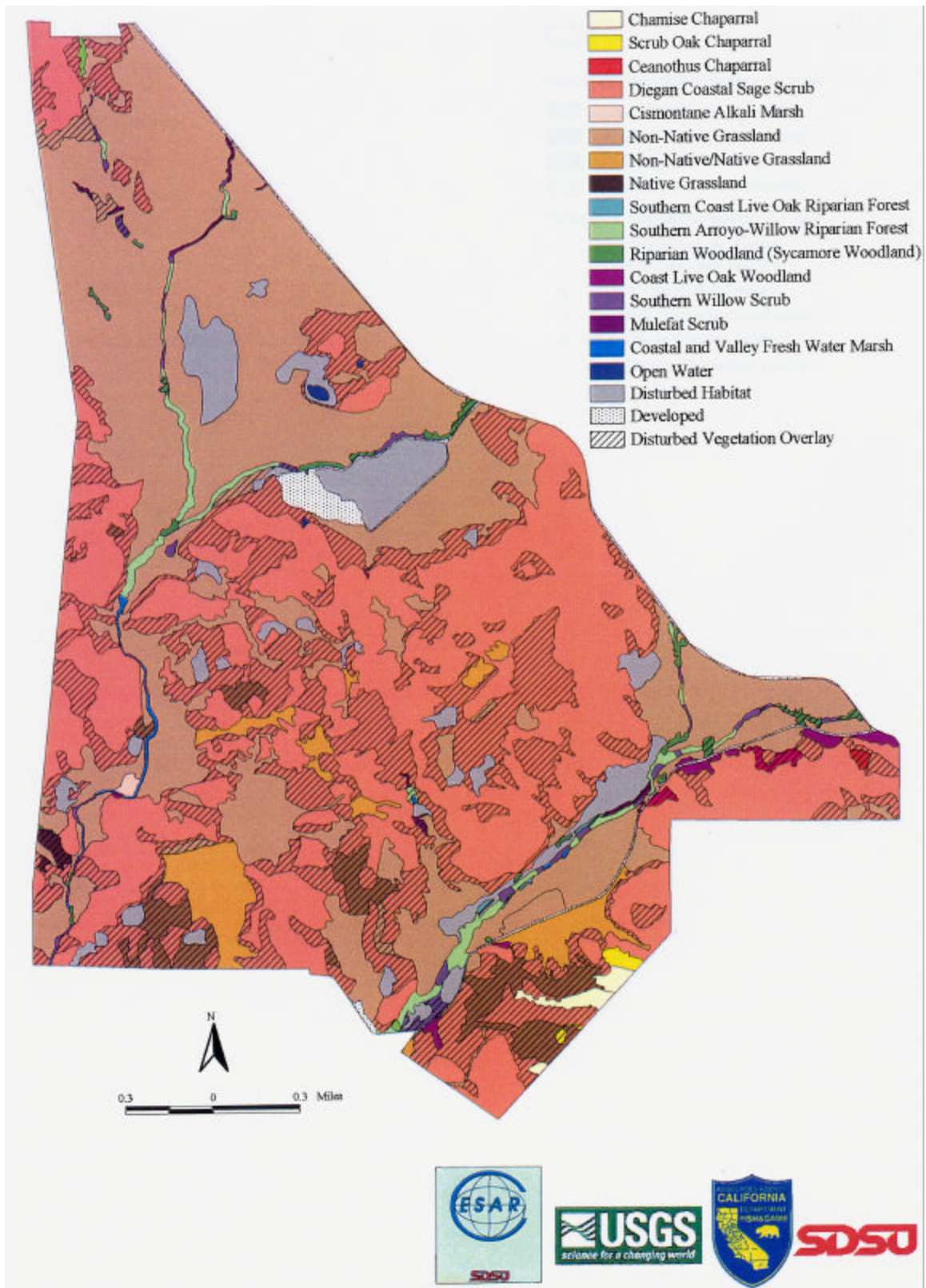


Figure 4. Rancho Jamul Ecological Reserve Vegetation Map